

Abstract

The invention is a method for diagnosing operation of a nonthermal
5 plasma discharge device and a lean NO_x trap disposed in the exhaust of an
internal combustion engine. The method further includes reducing power to the
nonthermal plasma discharge device and determining that the nonthermal
plasma discharge device is operating properly when a concentration of NO_x of
exhaust gases exiting the lean NO_x trap increases in response to reducing power
10 to the nonthermal plasma discharge device. Additionally, the nonthermal
plasma discharge device is found not to be operating when the NO_x
concentration remains substantially constant in response to a decrease in power
supplied to the nonthermal plasma discharge device.